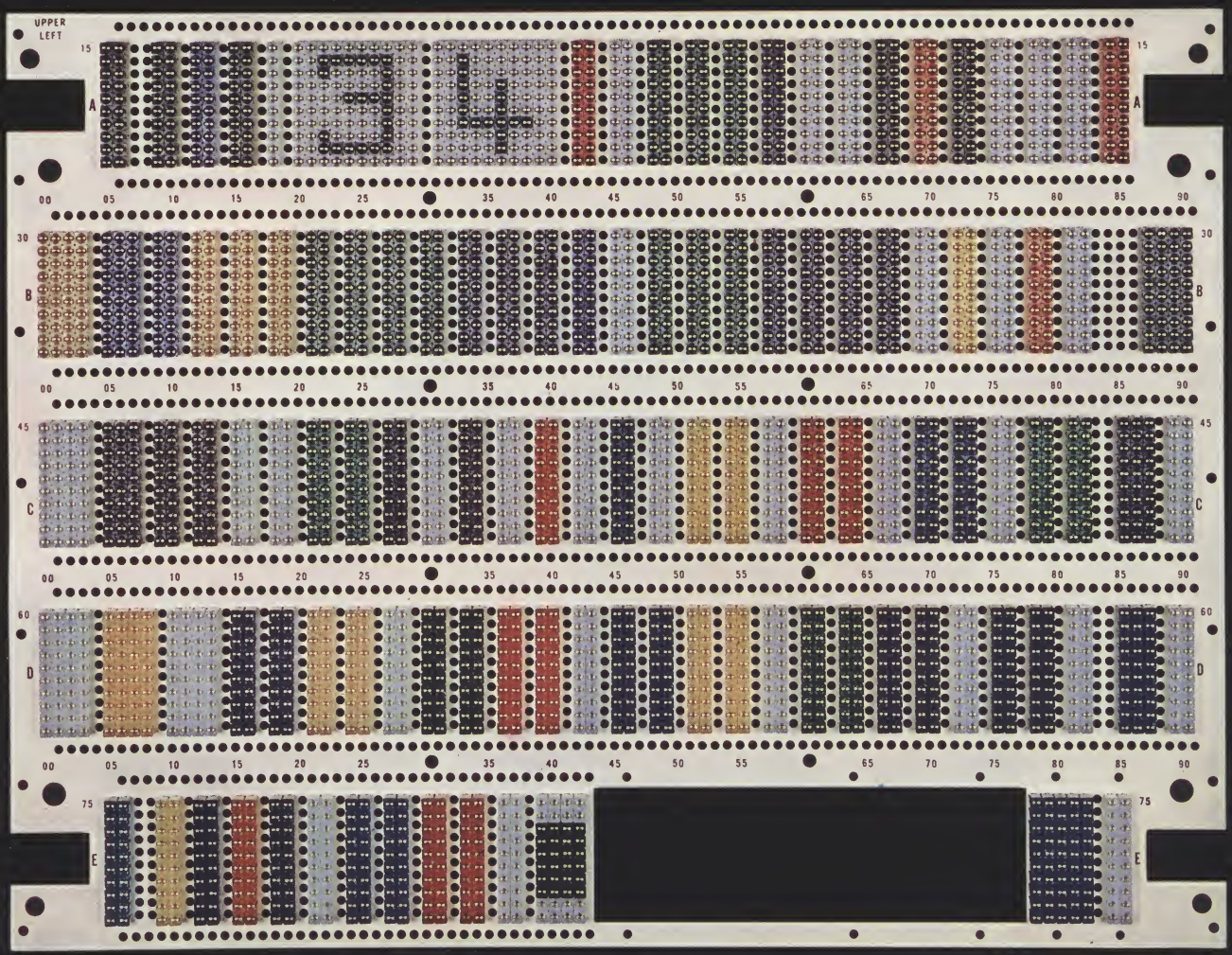
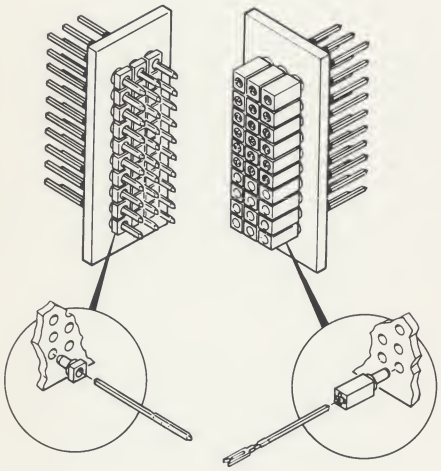


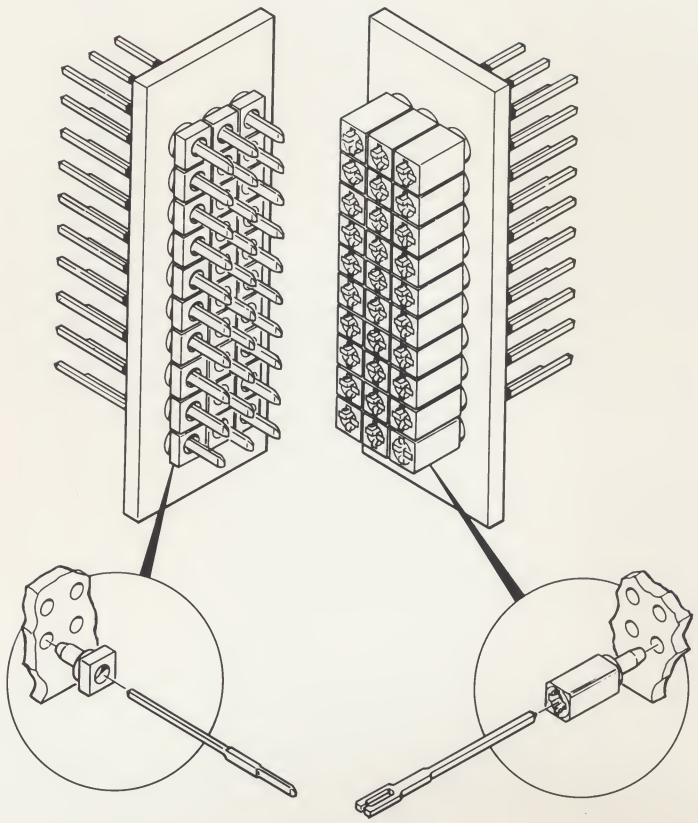
Amphenol

SNAP WRAP and MINI WRAP Connectors

CATALOG
SW-1



240 Series 30-Contact Mini-Wrap® (Miniature Size) Connector Pair



230 Series 30-Contact Snap-Wrap® (Standard Size) Connector Pair

SIMPLE SOLUTION TO MANY COMPLEX PROBLEMS

Snap-Wrap® (230 Series) and Mini-Wrap® (240 Series) Connectors are based on a modular design concept for which the original patents are jointly owned by AMPHENOL and Malco Manufacturing Co. of Chicago. By application of this concept, AMPHENOL's integrated and centralized facilities can be arranged to accommodate practically any configuration as a standard product. This enables AMPHENOL to produce "specials" rapidly and at low cost. Automatic check-out equipment and digital-type inspections insure high reliability.

Amphenol®

A DIVISION OF AMPHENOL-BORG ELECTRONICS CORPORATION
1830 S. 54TH AVENUE · CHICAGO 50, ILLINOIS · AREA 312 · 242-1000 · TWX 312-656-7125

Snap-Wrap® and Mini-Wrap® Connectors Fit Your Requirements

EXACTLY • ECONOMICALLY • QUICKLY

Modular Design Permits Any Configuration Desired

Snap-Wrap and Mini-Wrap connectors are built on a simple modular basis: Contacts are inserted into nylon bushings, and the bushings are "snapped" into punched holes in an aluminum base plate.

The base plate, available in various finishes, may be as big as 24″ x 24″ or as small as you want. It can be shaped, formed, notched, or have any kind of cutouts or mounting holes you need to fit your space and components. The holes may be punched (or omitted) in any configuration in a .200″ x .200″ grid, 21″ square on Snap-Wrap, or as close as .100″ x .100″ on Mini-Wrap connectors.

The nylon bushings serve as both contact retention devices and as a dielectric. Available in natural translucent white, or dyed to match any color code, they come in different sizes for different contact spacings.

Many different types of male and female contacts are available for wire-wrap*, crimp, or solder connections.

This simple modular construction gives Snap-Wrap and Mini-Wrap connectors practically unlimited versatility. In fact, even after you have the finished connector, if your contact or circuit requirements change, a simple tool enables you to insert or remove bushings (with contacts) at will.

Standard Components Reduce Cost and Speed Delivery

Because special tooling is at a minimum, Snap-Wrap and Mini-Wrap connectors can be tailor-made to your layout quickly and at low cost.

Automatic Wire-Wrap* Capability Cuts Assembly Time, Increases Reliability

Snap-Wrap and Mini-Wrap connectors can be wired with programmed automatic wrapping machines—for example, the Gardner-Denver machine—at savings up to 50% compared to soldering.

What's more, chances of wiring error and bad connections are virtually eliminated. In actual usage, failures average less than 1 to 500,000. Reliability is high because wire-wrap connections are resistant to corrosive atmosphere, severe shock and vibration.

Of course, Snap-Wrap and Mini-Wrap connectors are not limited to machine wrapping. Hand wire-wrap* tools may also be used effectively. Contact terminations for crimp or solder connections are available, too, in a variety of options for fast, efficient assembly methods such as automatic crimping or dip soldering. It's a well balanced connector line with provisions for all kinds of requirements.

Precision Spacing and Interlocking Parts Provide Strength and Stability

Snap-Wrap and Mini-Wrap contacts are accurately spaced to start with, and they *stay* that way. Unlike conventional molded connectors, they do not rely on the connector body for rigidity and mechanical strength. The combination of base plate and nylon bushings offers the right balance of strength, resilience, and light weight to assure excellent stability in all sizes and configurations.

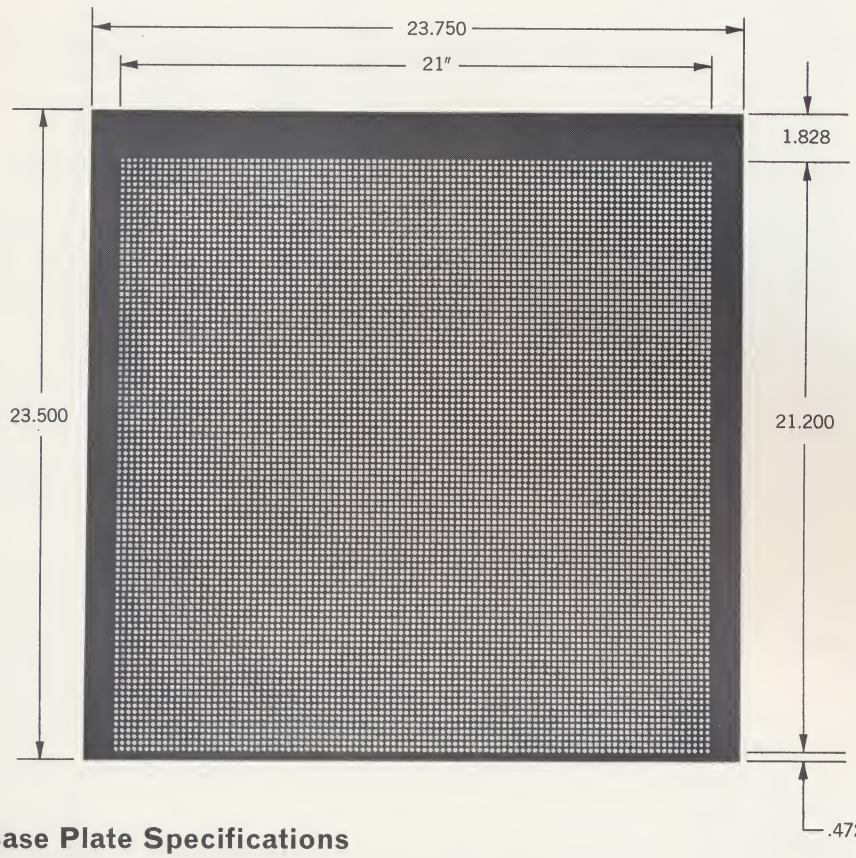
APPLICATION: WHEREVER YOU WANT LOW-COST, CUSTOM, EFFICIENT CONNECTORS—Whether it's a large area connector to eliminate a multitude of sub-assemblies (for example, a distribution center or computer programming board)—or a small odd-shaped connector to fit an irregular space—Snap-Wrap or Mini-Wrap connectors will do an excellent job.

You can use these connectors for any standard application, regular or miniature—for racks and panels—for printed circuit board connectors, headers, card cages—for plug-in modules—cable connectors—patch cord terminals and plugs. You can have jackscrews for locking action, countless polarization options—in short, practically anything you want.

HOW TO GET EXACTLY WHAT YOU WANT—Obviously, you have far too wide a range of choices in Snap-Wrap and Mini-Wrap connectors to permit selection by a simple part number system. The best way to get the exact combination of characteristics you want is to call your AMPHENOL Sales Engineer. He'll help you meet your specific requirements most efficiently.

*TM—Gardner-Denver Co.

Maximum Size Snap-Wrap Base Plate



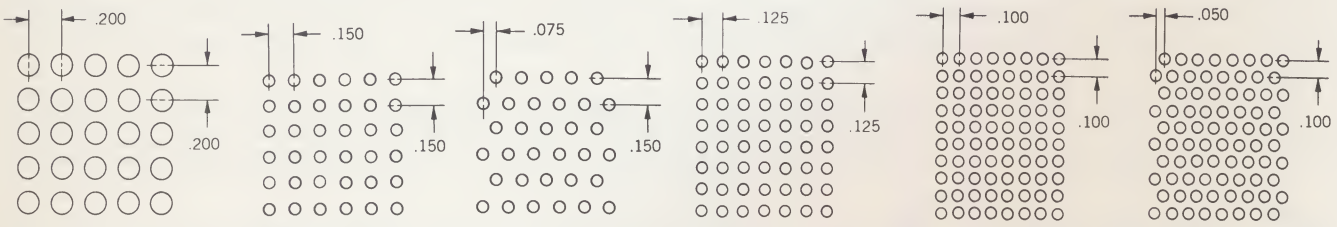
Mini-Wrap base plates are similar but slightly smaller and with more closely spaced grids.

Base Plate Specifications

Material: Aluminum AA1100-H14 (2S)
Thickness: Snap-Wrap: .125″ nominal—Mini-Wrap: .080″ nominal
Maximum Size: Snap-Wrap: 24″ x 24″—Mini-Wrap: 22″ x 22″
Maximum Number of Holes in Maximum Size Plate:
Snap-Wrap: 11,448 Commercial Pattern
7,560 Military Pattern
Mini-Wrap: .100″ Grid—26,662
.125″ Grid—17,169
.150″ Grid—11,988

Finish: Gold Iridite or Anodize (colors available)
Markings: Silk Screened and/or Rubber Stamping to Your Requirements
Grid Spacing Tolerance:
.003″ non-cumulative up to 100 sq. in. pattern
.005″ non-cumulative over 100 sq. in. pattern

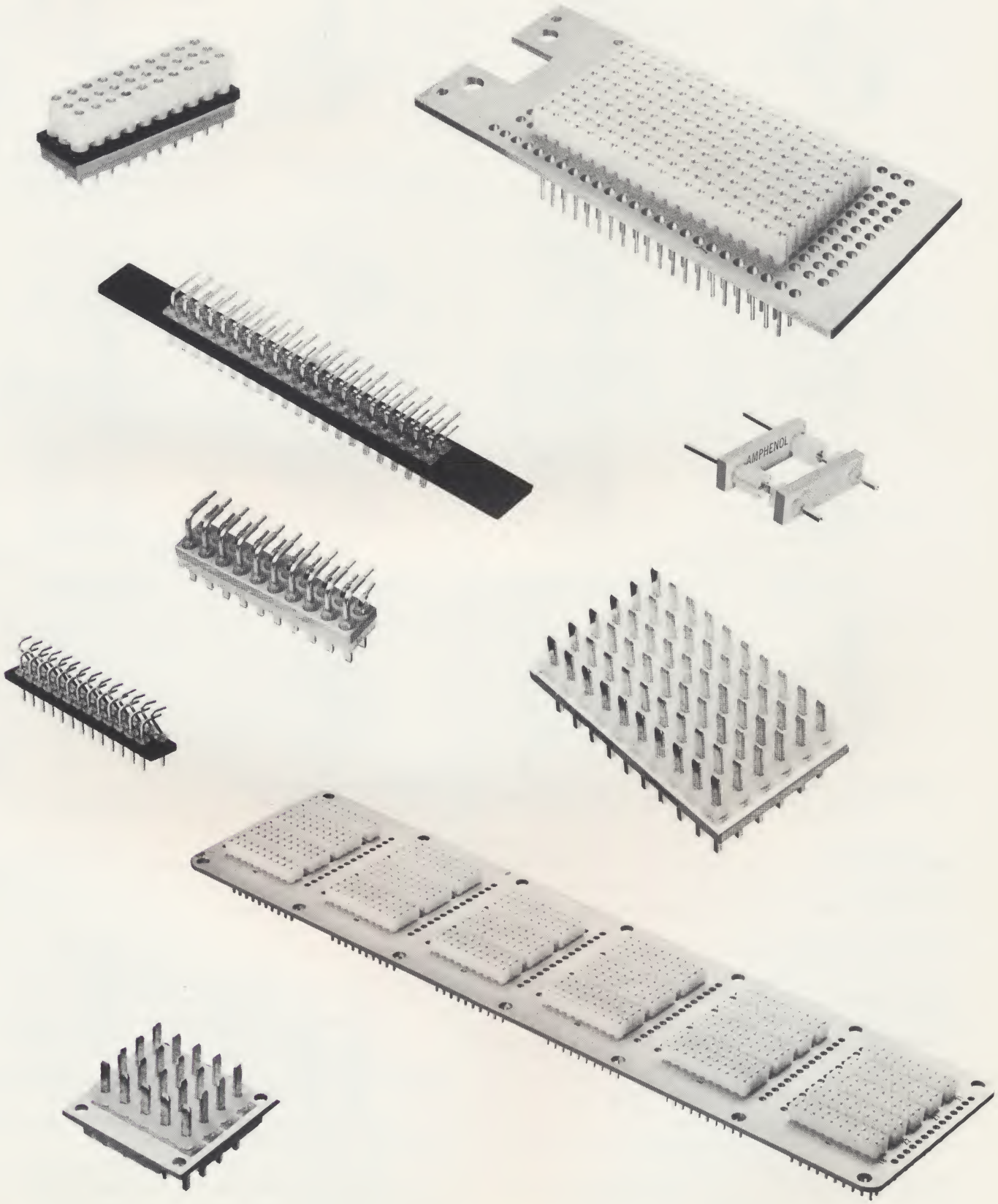
Grid Systems



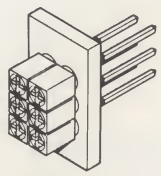
Snap-Wrap Grid | **Mini-Wrap .150″ x .150″ grid** | **Mini-Wrap .150″ x .075″ grid** | **Mini-Wrap .125″ x .125″ grid** | **Mini-Wrap .100″ x .100″ grid** | **Mini-Wrap .100″ x .050″ grid**

NOTE: All these grid systems are recommended for programmed automatic wire wrapping. Grid system arrangements for diagonal wiring are available on the .200″ x .200″, .150″ x 150″, and .100’ x .100″ grids.

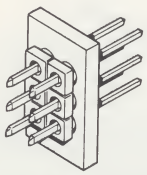
Typical Snap-Wrap® and Mini-Wrap® Connectors



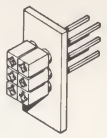
Snap-Wrap and Mini-Wrap Contacts (and Bushings)



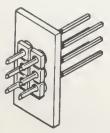
Wrapost Female Snap-Wrap



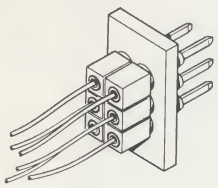
Wrapost Male Blade Snap-Wrap



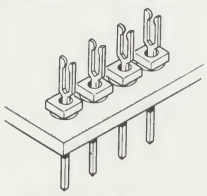
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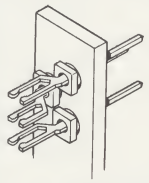
Wrapost Male Blade Mini-Wrap



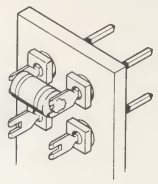
Male Crimp Snap-Wrap



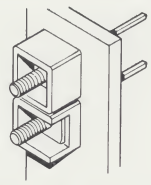
Wrapost Female Printed Circuit Card Snap-Wrap



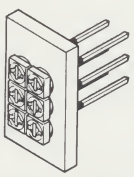
Wrapost Offset Female Printed Circuit Card Snap-Wrap



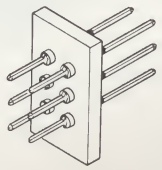
Wrapost Slotted Blade Snap-Wrap



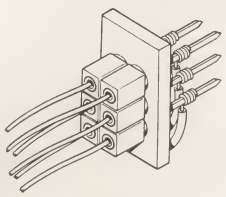
Wrapost Stud Snap-Wrap



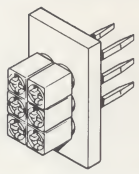
Wrapost Single End Snap Wrap



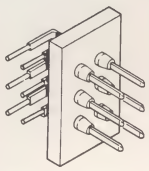
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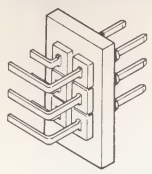
Wrapost Crimp Snap-Wrap



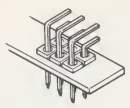
Wrapost Hermaphrodite Female-to-Male Snap-Wrap



P.C.B. Male Right Angle Round Tip Snap-Wrap



Wrapost Male Right Angle P.C.B. Rectangular Tip Snap-Wrap



P.C.B. Male Right Angle Mini-Wrap

NOTE: Due to the critical importance of accurate terminal positioning, all assembly of Snap-Wrap and Mini-Wrap connectors must be performed at AMPHENOL. Unassembled contacts, bushings, and contact-bushing sub-assemblies are available only for repair, replacement, evaluation, or engineering prototype purposes.

Contact Specifications

Current Rating: Snap-Wrap: 5 amps—Mini-Wrap: 3 amps
Working Voltage: Snap-Wrap: 880 VAC—Mini-Wrap: 300 VAC
Dry Circuitry: .1 microvolt at 10 milliamperes
Breakdown Voltage: Snap-Wrap: Approx. 3KV contact to contact
2.5KV contact to shell
Mini-Wrap: Approx. 2.5 KV contact to contact
1.5KV contact to shell
Contact Resistance: Below .002 ohms
Insulation Resistance: 1,000,000 megohms min. (Snap-Wrap & Mini-Wrap)
Max. Operating Temperature, Continuous: 95°C
Wire Size: #26 to #16 (Snap-Wrap)
#32 to #22 (Mini-Wrap)

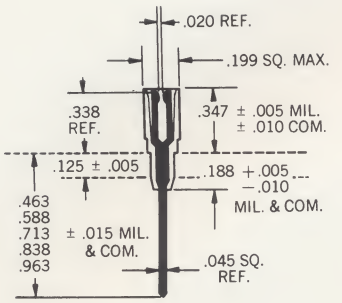
Material: Male Wire-Wrap: Brass per QQ-W-321
Male Crimp: Cadmium Copper 1/8" Hard
Female: Heat Treated Beryllium Copper per QQ-C-533 or Phosphor Bronze per QQ-P-330
Wrapost Stud: Brass per QQ-W-321

Finish: ① .000050 min. Gold per OS-10952 over .00020 min. Silver per QQ-S-365
② .00003 min. Gold per MIL-G-45204, Type II over .00020 min. Silver per QQ-S-365
③ Gold Flash .000020 min. over Copper Strike
④ Gold Flash .000020 min. over .00010 Nickel

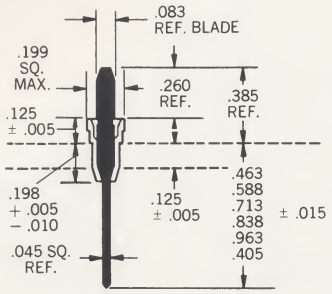
Bushing: Polyamide (Nylon) per MIL-M-20693A Type I

Contact Dimensions

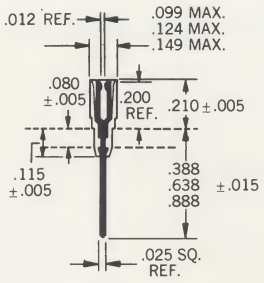
Inches



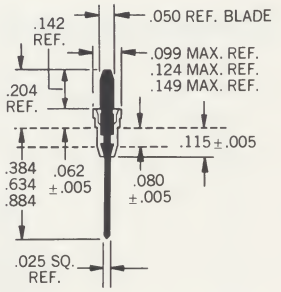
Wrapost Female Snap-Wrap



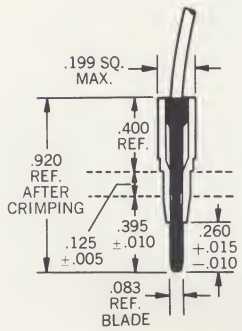
Wrapost Male Blade Snap-Wrap



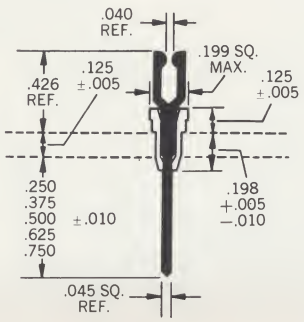
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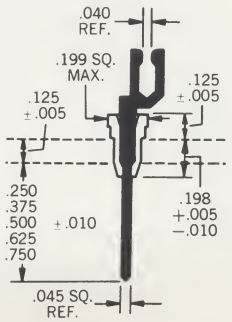
Wrapost Male Blade Mini-Wrap



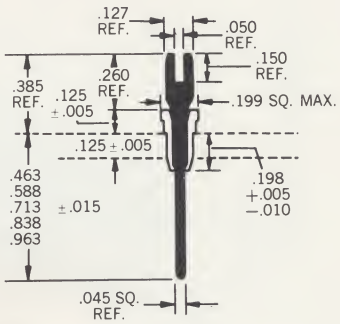
Male Crimp Snap-Wrap



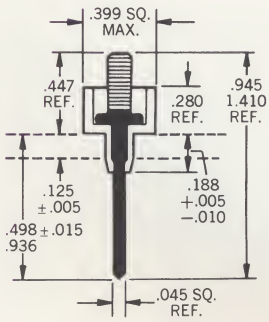
Wrapost Female Printed Circuit Card Snap-Wrap



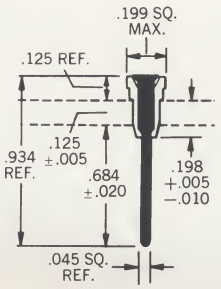
Wrapost Offset Female Printed Circuit Card Snap-Wrap



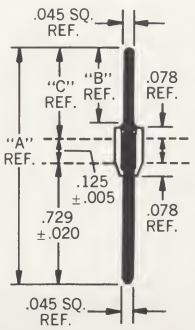
Wrapost Slotted Blade Snap-Wrap



Wrapost Stud Snap-Wrap

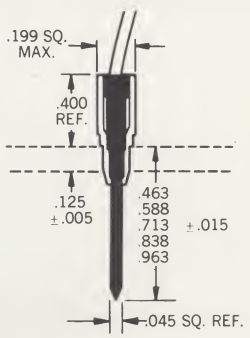


Wrapost Single End Snap Wrap

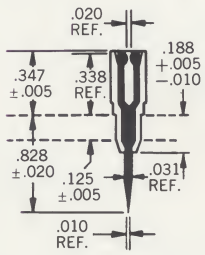


A DIM.	B DIM.	C DIM.
1.587	.625	.733
1.462	.500	.608
1.430	.468	.576
1.337	.375	.483
1.212	.250	.358
1.587	.625	.733
1.462	.500	.608
1.430	.468	.576
1.337	.375	.483
1.212	.250	.358

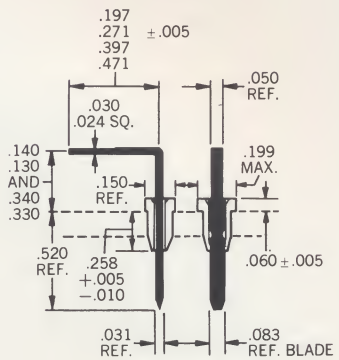
Wrapost Double End Snap-Wrap



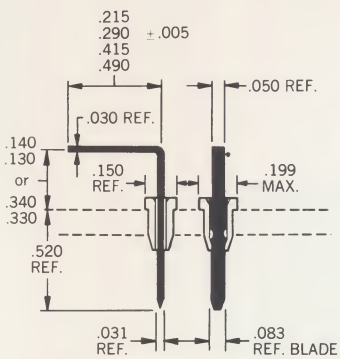
Wrapost Crimp Snap-Wrap



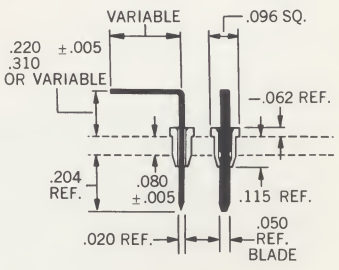
Wrapost Hermaphrodite Female-to-Male Snap-Wrap



P.C.B. Male Right Angle Round Tip Snap-Wrap

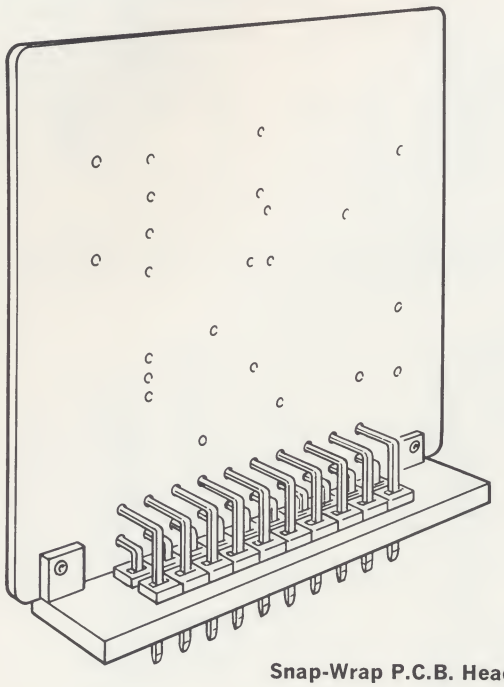


Wrapost Male Right Angle P.C.B. Rectangular Tip Snap-Wrap

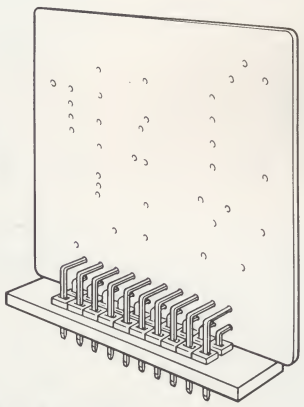


P.C.B. Right Angle Prebent Mini-Wrap

Printed Circuit Board Headers



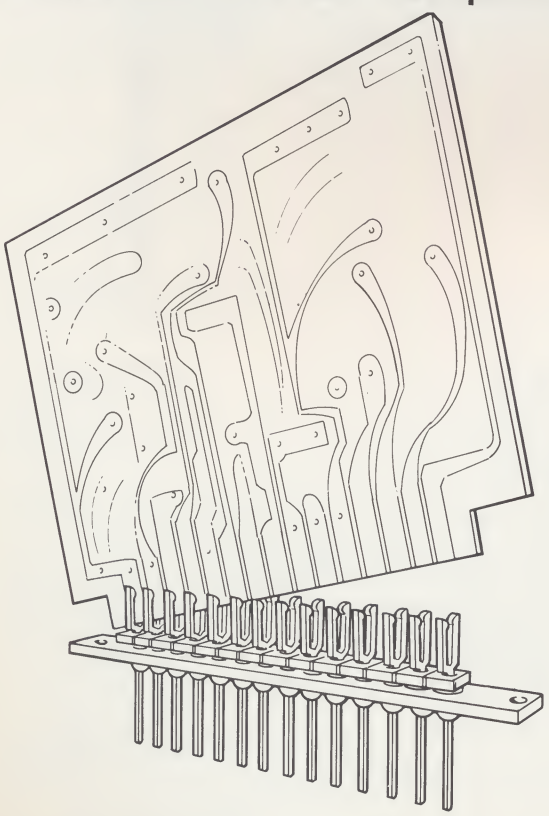
Snap-Wrap P.C.B. Header



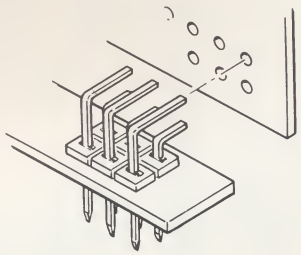
Mini-Wrap P.C.B. Header

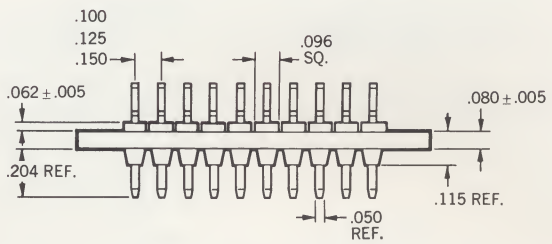
Available with 2, 3, or 4 rows of standard or miniature contacts, these sturdy aluminum headers accommodate printed circuit boards 1/16", 3/32", or 1/8" thick. The contacts are non-floating and mate accurately with panel board receptacles.

Printed Circuit Board Receptacles and Mini-Wrap Plugs



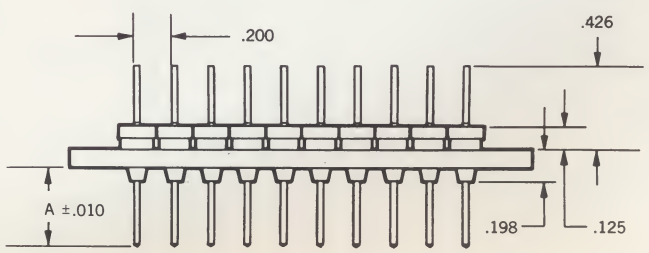
Snap-Wrap P.C.B. Receptacle

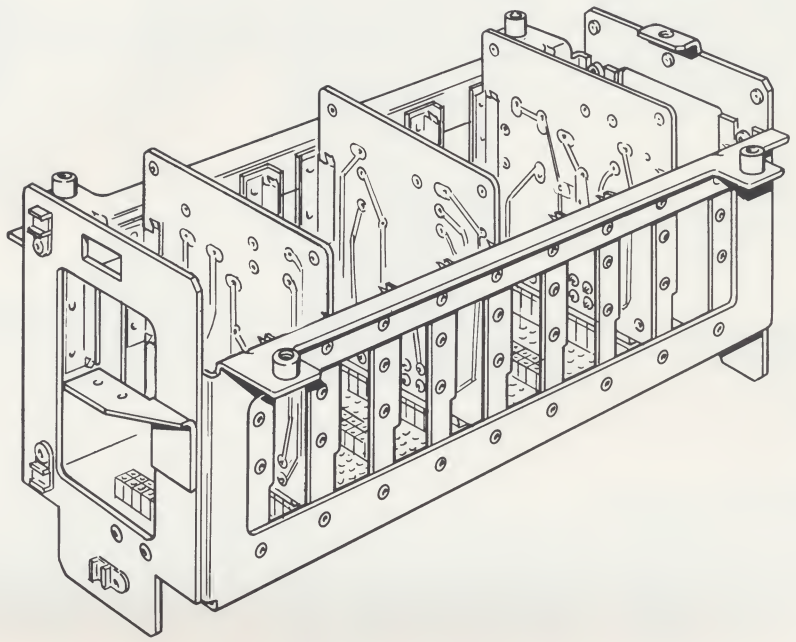


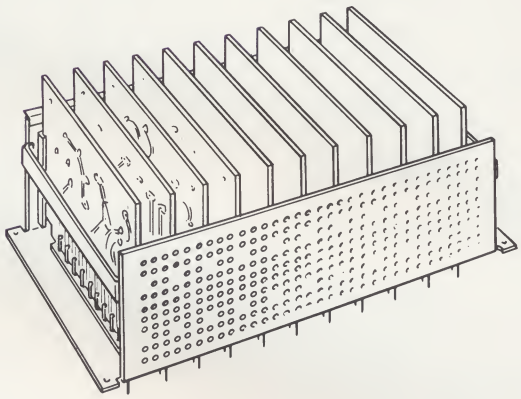


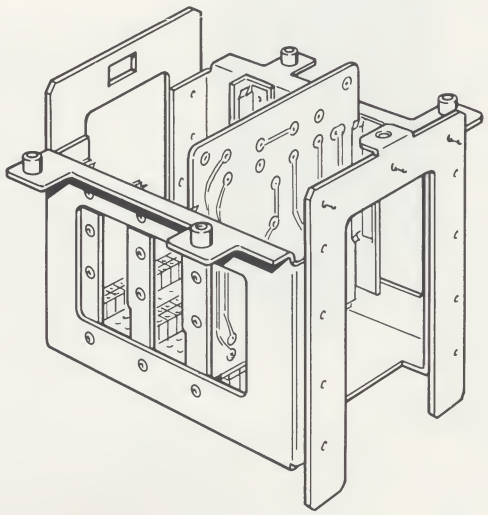
Mini-Wrap P.C.B. Receptacle

A
.250
.375
.500
.625
.750









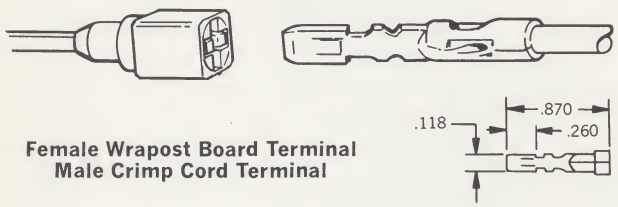
By simple forming of Snap-Wrap or Mini-Wrap base plates, AMPHENOL is able to supply economical card cages for your printed circuit board modules. The modular construction provides full freedom of choice in number of contacts per row and number of rows. Receptacle connectors can be provided for direct entry of boards or for boards mounted to headers.

Card cages are furnished ready for wiring and mounting, with contacts and card guides completely assembled. The rugged construction and the accurate placement of contacts and guides assure positive alignment.

Program Board Connectors

Patch Board and Cord Terminals

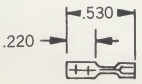
The Snap-Wrap principle is a natural for computer programming boards, and Snap-Wrap bushings and contacts serve excellently as patch board and patch cord terminals. Three different types of pairs are available. The crimp type terminals can be furnished in chain form for automatic crimping.



Female Wrapost Board Terminal
Male Crimp Cord Terminal

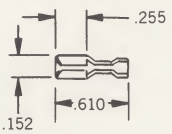


Male Wrapost Board Terminal
Female Receptacle Cord Terminal



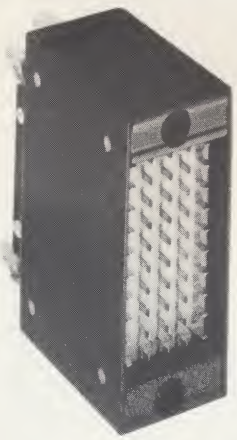


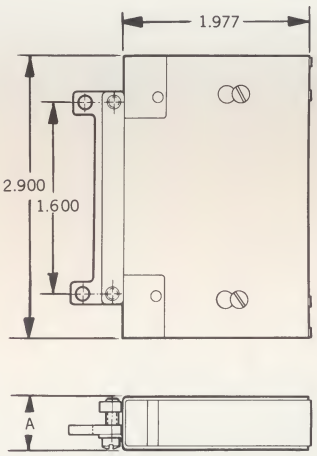
Male Wrapost Board Terminal
Receptacle Cord Terminal



Programmed Cable Connectors

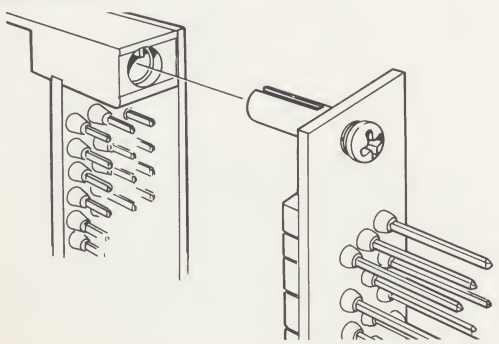
Featuring a removable header plate in a lightweight, rugged aluminum housing equipped with a cable clamp, the programmed cable connector provides 20 to 100 Snap-Wrap contacts. Dimensions of the connector for various numbers of contacts are shown below.





Dimensions—Inches	
Contacts	A
20	.540
30	.740
40	.940
50	1.140
60	1.340
70	1.540
80	1.740
90	1.940
100	2.140

Polarization



COMPLETE SNAP-WRAP CABLE ASSEMBLIES ARE READILY AVAILABLE—LET US KNOW OF YOUR REQUIREMENTS.



Every contact in a Snap-Wrap or Mini-Wrap connector can serve as a polarization guide, since it can be inserted at right angles to the normal contact pattern in the plate. Thus, there can be many polarizing combinations.

Another polarization method is to use programming keys—circular metal bushings with a keyway cut down one side to accept a keyed male pin or keying washer positioned inside the programmed cable connector. Polarization can also be achieved by using various sized guide pins.

Manual Insertion and Removal of Contacts

Individual contacts can be readily inserted or removed by use of a simple hand tool with adapters for the various contact types.

Poke Home Contact Crimping Tools



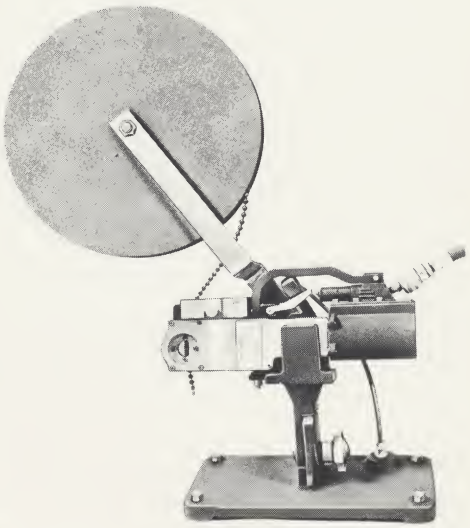
Positioner
See Table Below



MS 3191-1 294-126

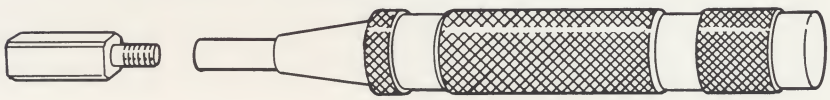


294-605



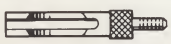
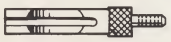
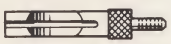
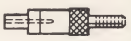
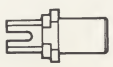
294-506

Manual Insertion and Removal Tool



Adapter (see table below) 294-1048 Handle

ADAPTERS

Part Number			Application		
Complete Tool Adapter and Handle	Adapter Only	Configuration	Contact Type	Number	Insulation
294-138-06	294-1047-06		Insertion Tool for Ship-JP	230-201; -338	
294-138-05	294-1047-05		Removal Tool for Male Crimp	23-0263	
294-138-43	294-1047-43		Insertion Tool for Male Crimp	230-263	For .120 O.D. Wire Insulation
294-138-42	294-1047-42		Insertion Tool for Male Crimp	230-263	For .085 O.D. Wire Insulation
294-138-41	294-1047-41		Insertion Tool for Male Crimp	230-263	For .070 O.D. Wire Insulation
294-138-03	294-1047-03		Insertion Tool for Male	230-282-00; 230-287; 230-273-00	
294-138-22	294-1047-22		Removal Tool for Wire Wrap– Tails	230-202-00; 230-201; 230-273-00; 230-287; 230-288; -338	½″ or Longer Wire Wrap*
294-138-21	294-1047-21		Removal Tool for Wire Wrap– Tails	230-202-00; 230-201; 230-273-00; 230-287; 230-288; -338	⅜″ or Shorter Wire Wrap*
294-138-01	294-1047-01		Insertion Tool for Female	230-202-00; 230-288	
Use with 294-126 Crimp Tool	294-1037-01 294-1037-02		Male Crimp Male Crimp	230-263 230-286	22-24-26 GA. 16-18-20 GA.

*TM Gardner-Denver Co.

Amphenol

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1830 South 54th Avenue • Chicago 50, Ill.

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AMPHENOL-BORG INTERNATIONAL OPERATIONS

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WEST GERMANY

Amphenol-Borg Electronics GmbH, 8024 Deisenhofen B. Munich

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OTHER INTERNATIONAL AREAS

Contact: International Operations
Amphenol-Borg Electronics Corporation, 2801 South 25th Avenue, Broadview, Illinois
Cable: Amphenol-Broadview

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